

## STUDIES IN AUSTRALIAN AQUATIC HEMIPTERA.

No. IV.<sup>(1)</sup>

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The Corixid Genus DIAPREPCORIS.

## PLATE III.

In 1897 Kirkaldy described a Corixid from south-eastern Australia which differed so considerably from any other known species that he erected for its reception the monotypic genus *Diaprepocoris*. Kirkaldy's specimens of the type species are cited as being females, but in 1922 the writer pointed out that superficially the male can be distinguished only when the wings are extended. The abdominal segments in this sex are not strikingly disordered as in other members of the genera of Corixidae; the fifth and sixth dorsal segments are, however, split, and these and the terminal segment are comparatively slightly asymmetrical, the irregularity being scarcely discernible on the venter. Also, the male has another sexual character, a curious apparatus, which the writer has supposed to be stridulatory, on the fifth and sixth dorsal abdominal segments.

In his original description Kirkaldy remarks: "Palae bisegmentate. . . . This second segment appears to be a genuine second tarsal segment, not a single claw." The palae of the type species are thin, sublunate, and the inner face is not as deeply spooned, or as widened, as in the majority of the Corixids.

There are now available two other species, which, while undoubtedly congeneric with *D. barycephala*, differ quite considerably in the form of the palae, which approach in shape those of the *Corixa* group; the pronotum in both of the new forms is even more transverse than in the type species.

Prof. Hungerford has proved that, without doubt, most of the water boatmen are largely herbaceous feeders, and that the remarkably modified anterior tarsi (or palae) are excellently formed for the scooping up of decayed vegetable matter, infusoria, etc., from the bottom of ponds. In aquaria Hungerford recommends feeding these bugs with finely-minced water weed, which in a short time encourages the propagation of astonishing quantities of infusoria. The writer has successfully maintained Corixids thus, and it may also be noted that some of our larger forms, such as *Porocorixa eurynome*, readily feed upon mosquito larvae when supplied to them.

One American species of the family, *Cymathia americana*, Hussey, is known to be carnivorous; the palae of *D. barycephala* are structurally somewhat similar to that species. The palae of the other two species described below indicate that their feeding habit is more in accordance with that of most other Corixids. The so-called second tarsal joint of *D. barycephala* seems to be a well-developed palal claw; in *Cymathia americana* the claw is quite as strong.

Ocelli are said to be absent in the Corixidae, but in the three species of *Diaprepocoris* there is a tiny, circular, very slightly convex, blackish area on the notocephalon near the inner margin of each eye; this appears to be a small ocellus, and should be regarded as of generic importance.

(1) Nos. I-III. appeared in Rec. S. Austr. Mus., 1922-1924.

## DIAPREPOCORIS, Kirkaldy.

*Diaprepocoris*, Kirkaldy, Ann. Mag. Nat. Hist. (6), xx., 1897, p. 52; Hale, Rec. S. Austr. Mus., i., 1922, p. 328.

Type, *D. barycephala*, Kirkaldy.

This genus may be separated from its allies by the following combination of characters. Notocephalon shining; two ocelli present. Pronotum very short and finely rugose, without transverse lines of colour. Scutellum large, at least three-fourths as wide as the prothorax, dull, clothed with tiny hairs. Hemelytra more or less dull, without small vermiculate or angulate markings; clavus and corium clothed with fine hairs. Palae similar in both sexes, with the terminal claw stout. Face convex in both sexes. Last three visible dorsal segments of abdomen of male asymmetric and split; without strigil, but with a stridulating apparatus, composed of two articles, lying on the fifth dorsal segment, a little to the right of the mid-line of the body.

Distribution (as at present known): Southern and Eastern Australia, Tasmania, and New Zealand.

## KEY TO THE SPECIES.

- a. Notocephalon about as long as, or slightly longer than, its width at base between eyes, distinctly conically produced in front of eyes. Length, 6 mm. to 8 mm.
- b. Pronotum four to six times wider than medial length. Palae in dorso-lateral view sublunate; interior concave face narrow, with the longest of the hairs fringing the lower margin not longer than greatest width of pala . . . . . *D. barycephala*
- bb. Pronotum nine times wider than medial length. Palae in dorso-lateral view falcate; interior concave surface wider, with the longest of the hairs fringing the lower margin much longer than greatest width of pala . . . . . *D. zealandiae*
- aa. Notocephalon wider posteriorly than medianly long, rounded in front and not much produced in front of eyes. Length, 5 mm. . . . . *D. personata*

## DIAPREPOCORIS BARYCEPHALA, Kirkaldy.

Pl. iii., figs. 1 and 5.

*Diaprepocoris barycephala*, Kirkaldy, *loc. cit.*, p. 53; Hale, *loc. cit.*, p. 329, fig. 350.

*Hab.*—South Australia, Victoria, New South Wales, and Tasmania.

*Diaprepocoris personata*, n. sp.

Pl. iii., figs. 2, 4, and 7.

♂. Notocephalon ochraceous, basally suffused with darker colour; rounded in front and a little produced in front of eyes; medial length less than width between intero-posterior angles of eyes; a very obsolete median carina towards base of head. The slightly raised exposed area of pronotum black, reaching to lateral edges of thorax, almost ten times as wide as medial length; very finely rugose, slightly shining; lateral angles acute; anterior margin shallowly, concavely incised in the middle; posterior margin a trifle sinuate. Scutellum brownish-black, finely punctate and clothed with tiny pale hairs; wider than long and three-fourths as wide as prothorax. Hemelytra subopaque; clavus and corium olivaceous-yellow, slightly glossy, moderately densely clothed with black hairs; inner edge of clavus black; membrane sordid yellow, infuscated with blackish on exterior edge, dull, and with an indication of a branching nervure; embolium brownish-black on inner half, narrowly bordered with ochraceous on external edge. When folded the hemelytra appear black owing to the dark colour of dorsum of abdomen. Legs ochraceous, the intermediate tarsi apically blackish; swimming hairs of posterior legs dark brown. Palae falcate in dorso-lateral view; fringing hairs of interior scoop brownish; anterior tibiae with a

few small spines, closely embracing base of palae; anterior femora with three or four short and stout spines on dorsal side near apex; and with inner face (against which the tibiae fits when the leg is flexed) flattened and somewhat excavate. Intermediate claws subequal in length to tarsi.

Length, 5 mm.; width of prothorax, 1.9 mm.

♀. Length, 5 mm.; width of prothorax, 2 mm.

*Hab.*—Western Australia: Swan River (type loc.) and Mundaring (J. Clark):

The short head, very transverse pronotum, and falcate palae are the salient features of this species when compared with *D. barycephala*. The stridulatory apparatus on the abdomen of the male is exactly as in the last-named species.

Only two examples were collected; the type was taken by Mr. Clark from the nest of an ant (*Iridomyrmex conifer*) which he was engaged in working for inquiline Coleoptera.

#### *Diaprepocoris zealandiae*, n. sp.

Pl. iii., figs. 3 and 6.

♀. Notocephalon testaceous, conically produced in front of eyes, its width at base between eyes about equal to the medial length; with a very obsolete carina towards base of head; posterior margin of head almost evenly concave. The slightly raised area of pronotum ochraceous, not reaching to lateral edges of thorax and nine times as wide as medial length, rugose, the rugae subnitid; lateral angles subacute; anterior margin shallowly concavely incised medianly and posterior margin very slightly sinuate. Scutellum testaceous, finely rugose, and clothed with very short, sparse pubescence; wider than long and three-fourths as wide as the prothorax. Hemelytra sordid yellow; clavus and corium clothed with fine golden hairs, longer than those of scutellum; embolium ochraceous, a little infuscated on inner half. Legs testaceous. Palae falcate in dorso-lateral view; anterior tibiae closely embracing base of palae. Intermediate legs rather stout.

Length, 6.1 mm. wide; width of prothorax, 2.1 mm.

*Hab.*—New Zealand (Pascoe Coll., in British Museum).

A single, somewhat damaged specimen of this species is before me. It superficially resembles *D. barycephala*, but the form is slightly more elongate, the pronotum is shorter, and the palae are very different. It may be separated from *D. personata* by the larger and more conically produced head, the narrower and more rugose pronotum, etc.

#### EXPLANATION OF PLATE III.

- Fig. 1. *Diaprepocoris barycephala*, male, from Lucindale, South Australia.  
 „ 2. *Diaprepocoris personata*, male, from Swan River, Western Australia.  
 „ 3. *Diaprepocoris zealandiae*, female, from New Zealand.  
 „ 4. Dorsum of abdomen of *D. personata*, male.  
 „ 5. Anterior leg of *D. barycephala*, male.  
 „ 6. Anterior leg of *D. personata*, male.  
 „ 7. Anterior leg of *D. zealandiae*, female.

Figs. 1 to 4 enlarged 11 diameters; figs. 5 to 7 enlarged 36 diameters.